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THE BECKMAN SYMPOSIUM ON BIOMEDICAL INSTRUMENTATION

In Celebration of the Fiftieth Anniversary
of the Founding of Beckman Instruments, Inc.
and the
Eighty-fifth Birthday of Arnold O. Beckman

In Conjunction with the Seventy-fifth Anniversary
of the Founding of The Rockefeller University Hospital

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INTRODUCTION

The Beckman Symposium on Biomedical Instrumentation represents a happy confluence of three celebrations in 1985.

This is the 50th Anniversary of Beckman Instruments, Inc. The company was founded by Arnold O. Beckman in 1935, with the manufacture of the pH meter. This was followed within a few years by the introduction of the helical potentiometer, or helipot, and the DU spectrophotometer. These instruments simplified and markedly increased the speed and precision of measurements, and they quickly became basic tools for the analytical chemist. Today, Beckman Instruments manufactures scores of analytical instruments and thousands of related chemical products that are indispensable for medicine, science, industry, education, agriculture, and space exploration.

The news of science usually concerns *what* results a scientist has achieved, not *how* he has found them. The methods and instruments used and developed in the course of a scientist's research are rarely considered news. All too often, the role of instrumentation—from the tedious steps in design, to commercial production, to routine maintenance—is taken for granted in the conduct of scientific life. Yet, scientific progress continues to depend on the invention and refinement of tools and techniques. This symposium celebrates the role of biomedical instrumentation in allowing scientists to probe more deeply into the intricate nature of life.

This is Arnold Beckman's 85th Birthday. The presentations that follow illustrate some of his contributions to science during a long and dedicated career. We will learn how the life of Arnold Beckman and the activities of Beckman Instruments have been intertwined with that of Rockefeller research programs. We salute Arnold Beckman's role in designing and producing instruments that aid every researcher in his scientific investigations.

This is the 75th Anniversary of The Rockefeller University Hospital. Founded in 1910, it was the nation's first clinical research center where human disease could be examined in a setting of rigorous scientific inquiry. Clinical studies carried out at the Hospital have had unequalled opportunities to bring to bear on a single disease all the latest scientific methods, emerging instrumentation, and technical resources.

Many scientists at Rockefeller have played significant roles in the application of physical and chemical methods to the life sciences. Numerous research techniques and instruments that originated at the University are now in common laboratory use throughout the world. The histories of two of these instruments are described in this symposium: the amino acid analyzer and the peptide synthesizer. This record of achievement is shared by the scientists, skilled craftsmen (instrument makers, glassblowers, engineers, and others), and scientist-entrepreneurs like Arnold Beckman. Their collective imagination and ingenuity in producing scientific instruments have helped to extend the researchers' perceptions of their senses, refine the precision of their techniques, and ultimately free their attention from routine tasks for creative research.

Joshua Lederberg
President
The Rockefeller University

Concluding Remarks

Joshua Lederberg

We, as scientists, are in a state of continuous revolution even with today's powerful technologies and those we can foresee in the next few decades. The important insights provided by contemporary biology only hint at even more daunting tasks that lie ahead.

The human genome has three billion nucleotide pairs. The fact that I cite this number to one significant figure is very humbling. Despite the help of gratuitous DNA, if it is that, there remain some 100,000 gene products. We will need to identify, explore, and then synthesize these in order to understand how the human organism ticks. While this task may receive the most emphasis, we will also want to pay some attention to polymorphisms in the human species and a few other products of evolution.

The technologies at our disposal today may seem powerful and sophisticated. Yet they will become trivial and perhaps irrelevant as we advance toward these conceptual horizons with even more intricate instrumentation.